

# DATA LOGGING GUIDES

## Data Logging Guides

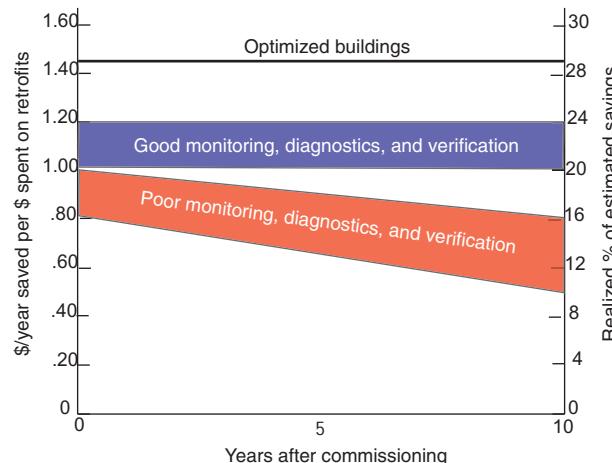
Energy Management and Control Systems (EMCS) often don't function correctly, or are not used to monitor energy consumption. Knowing the areas of high consumption is the first step to reducing energy use.

Energy waste can come from:

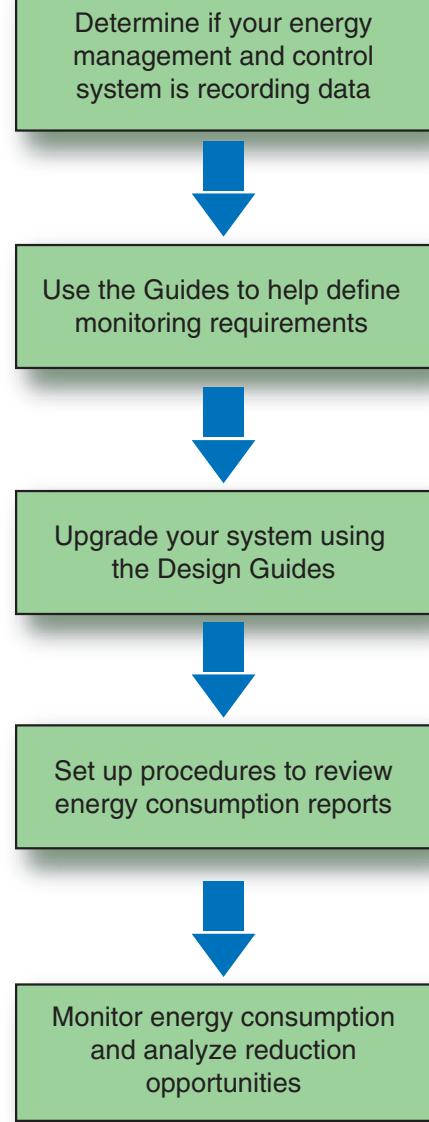
- faulty sensors
- faulty data
- not knowing consumption.

California building owners now have a way to assess their control systems, figure out how to upgrade them, and save energy. The California Energy Commission has released *Data Logging Guides* for three manufacturers (TAC-Americas—formerly Control Systems International, Andover Controls, and Siemens). Any of these guides supply information on sensors and functionality useful in assessing other suppliers' systems.

Without good monitoring, most buildings use more energy with time. Measured savings in optimized buildings average 145% of projected savings.



## Energy Efficiency Using Your EMCS



## What's in the Guides?

The *Guides* are organized into three main sections with appendices at the end.

- Chapter 1 introduces procedures that can be implemented.
- Chapter 2 details assessment procedures to determine the existing EMCS functions and installed sensors.
- Chapter 3 specifies set-up and configuration of the EMCS to obtain data for energy use measurements.
- Appendices contain programming details and accuracy requirements for implementation.

## Benefits

Tune-ups and recommissioning of existing buildings typically improve comfort as well as reducing energy use by 15 to 20 percent. But even these "fixes" are not permanent, and most buildings drift, often "invisibly," to lower performance levels over time, indicating a need for ongoing performance monitoring and fault detection and diagnosis.

- If one percent of all buildings used the tool to reduce energy consumption by 5%, first year savings of 45 GWh are achievable.
- If market penetration increased one percent per year, the ten-year cumulative savings would reach 2,500 GWh.

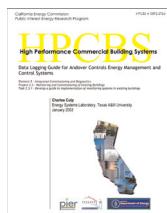
# INTERESTED?

## Data Logging Guides

**Building engineers** and **owners** can use the guides to help them understand where improvements and savings are possible.

**EMCS manufacturers** can use the Guides to plan upgrades that provide superior control based on monitored energy use.

**Energy consultants** can use the guides as a tool to improve energy performance.



The Data Logging Guides can be downloaded at the following sites:

[http://buildings.lbl.gov/hpcbs/pubs/E5P22T2a1\\_Andover.pdf](http://buildings.lbl.gov/hpcbs/pubs/E5P22T2a1_Andover.pdf)

[http://buildings.lbl.gov/hpcbs/pubs/E5P22T2a2\\_Siemens.pdf](http://buildings.lbl.gov/hpcbs/pubs/E5P22T2a2_Siemens.pdf)

[http://buildings.lbl.gov/hpcbs/pubs/E5P22T2a3\\_TAC.pdf](http://buildings.lbl.gov/hpcbs/pubs/E5P22T2a3_TAC.pdf)

This project is part of LBNL's High-Performance Commercial Building Systems program, a three-year public-private research initiative targeting substantial reductions in the energy costs of commercial buildings.

For access to all program results, see:  
<http://buildings.lbl.gov/hpcbs>



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## DATA LOGGING GUIDES: CONTROL ENERGY WASTE IN BUILDINGS

USE ENERGY MANAGEMENT  
AND CONTROL SYSTEMS

TO MONITOR ENERGY CONSUMPTION

